

70-1009

M6609005029

A SUMMARY OF SOUND VELOCITY, ENGINEERING PROPERTIES,  
PHOTOGRAPHY, SEDIMENT SIZE, CHEMISTRY, AND COMPOSITION  
OF TWO CORES FROM CHESAPEAKE BAY, DECEMBER 1968.

7 NOV 1970

Engineering Properties, Sound Velocities, and Photography

Prepared by:

Eugene V. Achstetter  
Cary M. Ross

Size & Composition

Prepared by:

Eugene V. Kelly  
Cary M. Ross

February 1969

NATIONAL OCEANOGRAPHIC DATA CENTER  
WASHINGTON, D.C. 20390

Original

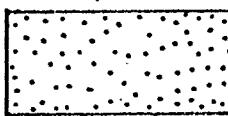
Geological Laboratory-Laboratories Branch  
Nearshore Surveys Division  
Oceanographic Surveys Department

U. S. Naval Oceanographic Office  
Washington, D. C. 20390

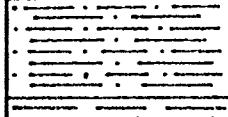
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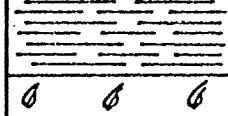
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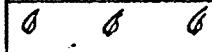
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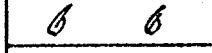
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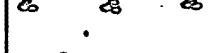
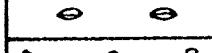
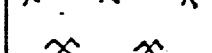
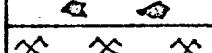
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GASTROPODS

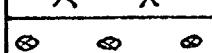
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DIATOMS &  
PTEROPODS

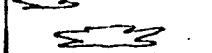
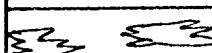
GLOBIGERINA

PEBBLES &  
GRAVELSSPINES &  
SPICULES

CORALS



MOTTLING



3

EXPLANATION OF DATA PAGES  
CORE ANALYSIS SUMMARY SHEET  
Engineering Properties  
NAVOCEANO (EXP) 3167/18B (Rev. 1-63)

Results of engineering properties, core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are recorded on Core Analysis Summary Sheet Engineering Properties.

The following is a description of the terms employed on the Core Analysis Summary Sheet:

1. Cruise Number. A number assigned to each cruise for identification purposes.
2. Latitude. Expressed in degrees, minutes, and seconds.
3. Longitude. Expressed in degrees, minutes, and seconds.
4. Sample Number. A consecutive number, commencing with 1 applied to each core taken successively throughout the cruise.
5. Date Taken. Day (GMT), month, and year.
6. Water Depth (m). The uncorrected sonic sounding recorded in meters.
7. Type Corer. Identified by the name of device employed.
8. Core Length (cm). Recorded in centimeters as observed in the laboratory.
9. Core Penetration (cm). Recorded in centimeters as observed in the field.
10. Subsample Depth in Core (cm). Interval of subsample as measured in centimeters from the top of the core.
11. Wet Unit Weight (g/cm<sup>3</sup>). The weight (solids plus water) per unit volume of the sediment mass.
12. Specific Gravity of Solids. The ratio of weight in air of a given volume of a sediment at 20°C to the weight in air of an equal volume of distilled water at 20°C.
13. Water Content (% dry weight). The ratio, in percent, of the weight of water in a given mass of the sediment sample to the weight of the solid particles.
14. Void Ratio. The ratio of the volume of void spaces to the volume of solid particles in the sediment sample as computed from Wet Unit Weight, Specific Gravity of Solids, and Water Content.

15. Saturated Void Ratio. The Void Ratio at 100 percent saturation as computed from Water Content and Specific Gravity of Solids.

$$\text{Saturated Void Ratio} = \frac{\text{Water Content} \times \text{Specific Gravity of Solids}}{100}$$

16. Porosity (%). The ratio, usually expressed as a percentage, of the volume of voids of a sediment mass to the total volume of the sediment mass.

17. Liquid Limit. Water Content, in percent, at which a pat of sediment cut by a groove of standard dimension will flow together for a distance of 1/2 inch under the impact of 25 blows in a standard liquid limit apparatus.

18. Plastic Limit. Water Content, in percent, at which a sediment will just begin to crumble when rolled into a thread approximately 1/8 inch in diameter.

19. Plasticity Index. The numerical difference between the Liquid Limit and Plastic Limit of the sediment mass.

20. Liquidity Index. The ratio, expressed in percentage, of (1) the natural water content of the sediment sample minus its Plastic Limit to (2) its Plasticity Index.

21. Compression Index. The slope of the linear portion of the Pressure-Void Ratio curve on a semi-log plot.

22. Compressive Strength. The load per unit area required to shear an unconfined, natural or remolded, sediment mass.

23. Cohesion. The shearing strength per unit area under zero externally applied load.

24. Sensitivity. The ratio of the natural to the remolded strength. It is a measure of the loss of strength due to remolding the sediment mass.

25. Angle of Internal Friction ( $^{\circ}$ ). The angle between the abscissa and the tangent of the curve representing the relationship of "shearing resistance" to "normal stress" acting within a sediment mass.

26. Activity. The ratio of the Plasticity Index to the clay fraction percentage (<.002mm) of the sediment mass.

27. Modulus of Elasticity. The ratio of stress to strain of the sediment mass.

28. Slump (%). The ratio, in percent, of the amount of height change immediately before the compressive strength test to the original height of a cylinder of sediment.

EXPLANATION OF COMPUTER DATA SHEET  
SEDIMENT SIZE AND COMPOSITION

Results of sediment-size and composition core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are tabulated on Computer Data Sheet Sediment Size and Composition.

The following is an explanation of the terms employed on the Computer Data Sheet:

1. CRUISE. A number assigned to each cruise for identification purposes.
2. SAMPLE. A consecutive number applied to each core taken successively throughout the cruise.
3. LATITUDE. Expressed in degrees, minutes, and tenth of minutes.
4. LONGITUDE. Expressed in degrees, minutes, and tenths of minutes.
5. TAKEN. Date in day, month, and year that core was taken.
6. CORER TYPE. Number corresponding to sampling device code below.

- |                         |                |
|-------------------------|----------------|
| 1. Hydroplastic piston  | 6. Orange Peel |
| 2. Hydroplastic gravity | 7. Ewing       |
| 3. Kullenberg piston    | 8. Vibrocorer  |
| 4. Kullenberg gravity   | 9. Dredge      |
| 5. Phleger gravity      | 0. Other       |

7. LENGTH. Length of core recorded in centimeters as observed in the laboratory.

8. PENETRATION. Penetration of coring device recorded in centimeters as observed in the field.

9. DEPTH. The uncorrected sonic sounding recorded in meters.

10. ANALYZED. Date in day, month, and year that the core was analyzed in the laboratory.

11. ID. NO. Three digit laboratory project number followed by consecutive number assigned to each subsample analyzed.

12. INTERVAL. Interval of subsample as measured in centimeters from the top of the core.

13. MM. Particle diameter size intervals based on Wentworth size grades in millimeters.

14. PER. Percent of total sample weight within the given size interval. Smallest size analyzed is 0.0010 mm. Percent recorded for 0.0000- is

(6)

MGG.0 9 0 0 5 0 2 9

percentage of particles smaller than 0.0010 mm.

15. GRAVEL, SAND, SILT, CLAY. Percent of total sample weight within the four size classes.

Class ranges are: Gravel - coarser than 2mm  
Sand - 2 to 0.0625 mm  
Silt - 0.0625 to 0.0039 mm  
Clay - finer than 0.0039

16. MEAN (MM). The geometric mean of the distribution expressed in millimeters.

17. MEAN (PHI). The logarithmic mean of the distribution expressed in phi units (- $\log_2$  of the diameter in millimeters).

18. STAN DEV. Standard deviation. A measure of the degree of spread or dispersion of the distribution about the mean expressed in phi units.

$$s = \sqrt{\frac{1}{\sum f(x_i - \bar{x})^2}} / 100$$

19. SKEWNESS. A measure of the asymmetry of the distribution. Positive values denote skewness of the distribution toward the fine particles, negative values denote skewness toward the coarse particles. A normal distribution has a skewness of 0.

$$\text{SKEWNESS} = 1/100 s^{-3} \leq f(x_i - \bar{x})^3$$

20. KURTOSIS. A measure of the peakedness of the distribution. Positive values denote a "leptokurtic" distribution, or a distribution more "peaked" than normal. Negative values denote a "platykurtic" distribution, or a distribution more "flat" than normal. A normal curve has a kurtosis of 0.

$$\text{KURTOSIS} = 1/100 s^{-4} \leq f(x_i - \bar{x})^4 - 3$$

21. CACO<sub>3</sub>. Percent calcium carbonate of the total sample weight as determined by the insoluble residue method.

22. ORG CARBON. Percent organic carbon of the total sample weight as determined by the Allison method.

23. COLOR. Wet sediment color, based on the Geological Society of America Rock-Color Chart, as determined in the laboratory.

24. DOM CONSTITUENT. Dominant constituent (s) comprising >.0625mm fraction.

25. SEC CONSTITUENT. Secondary constituent (s) comprising >.0625mm fraction.

## CORE DESCRIPTION SHEET

NAVOCEANO 3167 '93 (W. 68)

M 109005029 7

SAMPLE NO. BS-1 (STATION #3)

LOCATION: CHESAPEAKE BAY SAMPLER TYPE: BOOMERANG

LATITUDE 38° 23' 23"

WATER DEPTH (M): 9.8

LONGITUDE 76° 32' 42"

CORE LENGTH (CM): 65

DATE CORED (D,M,Y): DEC. 1968

CORE PENETRATION (CM): -

LOGGED BY: ACHSTETTER

ITEM NO: 362

DATE LOGGED IN (D,M,Y): 13 JAN. 69

REMARKS: (Odor, bedding, shells, structures, mottling, disturbance, etc.)	DEPTH (CM)	CORE SKETCH	COLOR (GSA)	LAB. NO.	SAMPLE INTERVAL (CM)	SEDIMENT TYPE (Visual)
VERY STRONG H <sub>2</sub> S ODOR.			N2 GRAYISH BLACK	362-1	0 - 5	SILTY
HIGHLY ORGANIC. (0-5CM.)			N3 DARK GRAY	362-2	5 - 11	CLAY
SHELL & SHELL FRAGMENTS. (5CM.)						
(IRRATIONAL COLOR CHANGE. (5-11CM.)	10					
PRECISE COLOR CHANGE (11CM.)	10			362-3	11 - 16	
VERTICAL CRACK (0-16CM.)	10			362-4	16 - 20	
	20			362-5	20 - 25	
	30			362-6	25 - 30	
	40			362-7	30 - 35	
	50			362-8	35 - 40	
	60			362-9	40 - 45	
	65CM.			362-10	45 - 50	
	70			362-11	50 - 55	
	80			362-12	55 - 60	
	90			362-13	60 - 65	
	00					

## CORE DESCRIPTION SHEET

NAVOCEANO-3167 '93 (3-68)

MGG 09005029

SAMPLE NO. CHESAPEAKE BAY

LOCATION: BS-2 (STATION) 2 SAMPLER TYPE: BOOKER ZANG

LATITUDE 38° 23' 38"'

WATER DEPTH (M): 7.9

LONGITUDE 76° 31' 49"

CORE LENGTH (CM): 68

DATE COVERED (P.M.Y) DEC. 1968

**CORE PENETRATION (cm)**

DATE CORED (D,M,Y): -2

**CORE PENETRATION**

卷之三十一

MGG 09005029

## SEDIMENT SIZE AND COMPOSITION DATA

CRUISE	SAMPLE	LATITUDE	LONGITUDE	TAKEN
CORER TYPE 0	1 LENGTH 65.0	23.4 N	76 32.7 W	ANALYZED /01/69
		PENETRATION 0.0	DEPTH 9.8	

W 109005029

McGOG 9005029

ID. NO. 362 13  
INTERVAL 60.0- 65.0

MM	PER	PER	PER	PER
4.0000	0.000	0.000	0.000	0.000
2.0000	0.000	0.000	0.000	0.000
1.0000	0.000	0.000	0.000	0.000
0.5000	0.083	0.083	0.083	0.083
0.2500	0.083	0.083	0.083	0.083
0.1250	0.250	0.250	0.250	0.250
0.0625	0.334	0.334	0.334	0.334
0.0312	13.761	13.761	13.761	13.761
0.0156	6.255	6.255	6.255	6.255
0.0078	7.923	7.923	7.923	7.923
0.0039	8.757	8.757	8.757	8.757
0.0020	9.591	9.591	9.591	9.591
0.0010	7.089	7.089	7.089	7.089
0.0005	0.000	0.000	0.000	0.000
0.0000	45.872	45.872	45.872	45.872

GRAVEL 0.000  
SAND 0.751  
SILT 36.697  
CLAY 62.552

MEAN (MM) 0.0021  
MEAN (PHI) 8.9187  
STAN DEV 2.7315  
SKEWNESS -0.2423  
KURTOSIS -1.2344

CACO3 4.000  
ORG CARBON 2.640  
COLOR 5Y4/1  
DOM MINERAL QUARTZ  
SEC MINERAL SHELL FRAG

FIELD DATA CARD MISSING. CARD NO.,4 READ.

FIELD DATA CARD MISSING. CARD NO.,6 READ.

## SEDIMENT SIZE AND COMPOSITION DATA

ID. NO.	362	14	362	15	362	16	362	17	362	18	362	19
INTERVAL	5.0-	10.0	10.0-	15.0	15.0-	20.0	20.0-	25.0	25.0-	30.0	30.0-	35.0

PER PER PER PER

4.0000 0.469  
3.0000 0.159  
2.0000 0.069  
1.0000 0.000  
0.0000 0.000

1.0000	0.469	0.458	0.557	0.0000	0.0000	0.0000	0.342
0.5000	0.458	0.458	0.557	0.0000	0.0000	0.0000	0.342
0.2500	0.458	0.458	0.557	0.0000	0.0000	0.0000	0.342
0.1250	0.458	0.458	0.557	0.0000	0.0000	0.0000	0.342
0.0625	0.458	0.458	0.557	0.0000	0.0000	0.0000	0.342

0.625 0.469 0.557  
0.312 0.175 0.276

0.0156	7.825	5.566	3.140	2.069	3.425
0.0279	3.236	2.222	1.394	0.998	1.158
0.0402	2.336	1.681	1.054	0.724	0.998
0.0525	1.825	1.322	0.854	0.598	0.825
0.0648	1.464	1.062	0.681	0.464	0.648

0.0039	7.825	7.634	7.925	8.276
0.0039	7.825	7.634	7.925	8.276

3.0010 11.737 11.034 8.849  
3.0005 6.870 8.349 8.349  
3.0000 6.870 8.349 8.349

0.0000- 47.731 50.382 50.093 49.451 53.793 53.082

GRAVEL 0.626 0.153 0.371  
SAND 1.565 1.385 0.000

SILT	30.516	31.450	28.015	29.199	24.276
CLAY	67.283	66.612	66.533	65.555	65.522

MEAN (MM) 0.2019 0.018 0.2017 0.2018

MEAN (PHI)	9.1541	9.1198	9.2032	9.3116	9.0018
STAN. DEV.	2.7643	2.8041	2.7732	2.5363	9.1182

SKEWNESS	-0.5366	-0.4271	-0.5147	-0.3582	-0.4728	-0.5557
KURTOSIS	0.9879	0.132	0.1675	0.323	0.323	0.323

ORG CARBON 2.690 2.730 2.650 2.720  
CO2/R 5Y2/1 5Y2/1 5Y2/1 5Y2/1  
2.310

DOM MINERAL QUARTZ QUARTZ QUARTZ QUARTZ QUARTZ QUARTZ

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13

MGG 09005029

14  
MGG 0 9 0 0 5 0 2 9

ID. NO. 362 26  
INTERVAL 65.0- 68.0

MM	PER.	MM	PER.	MM	PER.	MM	PER.
4.0000	0.000	2.0000	0.330	1.0000	0.116	0.5000	0.116
0.2500	0.348	0.1250	0.580	0.3625	1.160	0.0312	7.773
0.0156	8.121	0.0078	8.701	0.0039	8.121	0.0020	11.021
0.0010	7.541	0.0005	9.300	0.0000	46.404	0.000-	

GRAVEL

SAND 0.000

SILT 2.320

CLAY 32.715

64.965

MEAN (MM) 0.0019

MEAN (PHI) 9.0209

STAN DEV 2.6873

SKENNESS -0.3118

KURTOSIS -0.8051

CACO3

ORG CARBON

COLOR

DOM MINERAL

SEC MINERAL

5Y4/1

QUARTZ

SHELL FRAG

MCG 09005029

SEDIMENT CORE ANALYSIS STA 3 CORE 1 38 23 23N 76 32 42W BOOM CHESAPEAKE BAY

CORE DIAMETER = 0.072 METERS TEMP = 18.1C SALINITY = 15.76 DEPTH = 9.8

CORRECTION FOR IN SITU PRESSURE = -0.01 M/S.

SOUND VELOCITY OF THE BOTTOM WATER = 1494.41 M/S

CORE DEPTH (CM.)	SD VEL SED (M/S)	DELTA T (SEC)	SD VEL WATER (M/S)	TEMP CORR (M/S)	TEMP CORR (M/S)	STP CORR (M/S)
15.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
15.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
20.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
20.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
25.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
25.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
30.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
30.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
35.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
35.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
40.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
40.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
45.	1454.	-0.8000E-06	1495.	24.0	-15.650	-1.274
45.	1451.	-0.9000E-06	1495.	24.0	-15.650	-1.274
50.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
50.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
55.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
55.	1457.	-0.7000E-06	1495.	24.0	-15.650	-1.274
60.	1451.	-0.9000E-06	1495.	24.0	-15.650	-1.274
60.	1451.	-0.9000E-06	1495.	24.0	-15.650	-1.274

**MC 09005029**

**SEDIMENT CORF ANALYSIS STA 2 CORE 2 38 23 38N 76 31 49W BOOM CHESAPEAKE BAY**

**CORE DIAMETER = 0.072 METERS TEMP = 18.10 DEPTH = 7.9**

**CORRECTION FOR IN SITU PRESSURE = -2.64 M/S**

**SOUND VELOCITY OF THE BOTTOM WATER = 1494.38 M/S**

CORE DEPTH (CM.)	SD VEL SED (M/S)	DELTA T (SEC.)	SD VEL WATER (M/S)	TEMP (C.)	STP	STP
					TEMP CORR (M/S)	TEMP CORR (M/S)
20.	1451.	-0. 9000E-06	1494.	23.6	-14.674	-1.187
25.	1451.	-0. 9000E-06	1494.	23.6	-14.674	-1.187
30.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
35.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
40.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
45.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
50.	1451.	-0. 9000E-06	1494.	23.6	-14.674	-1.187
55.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
55.	1454.	-0. 8000E-06	1494.	23.6	-14.674	-1.187
60.	1448.	-0. 1000E-05	1494.	23.6	-14.674	-1.187
65.	1451.	-0. 9000E-06	1494.	23.6	-14.674	-1.187
65.	1451.	-0. 9000E-06	1494.	23.6	-14.674	-1.187
65.	1448.	-0. 1000E-05	1494.	23.6	-14.674	-1.187

## CORE ANALYSIS SUMMARY SHEET

### ENGINEERING PROPERTIES

PRNC-NAVOCEANO-3167/18 B (4-63)

ANALYZED BY ACHSTETTER  
DATE 16 JANUARY 1960

116-86

1. CRUISE NO. CHESSAPEAKE BAY	4. SAMPLE NO.	135 - 1	(STATION #3)	7. TYPE CORER	Boomeranza
2. LATITUDE 38° 23' N	5. DATE TAKEN (Day, month, year)	DEC. 1968	8. CORE LENGTH (cm)	65	
3. LONGITUDE 76° 32' 42"	6. WATER DEPTH (m)	9. CORE PENETRATION (cm)			
10. SUBSAMPLE DEPTH IN CORE (cm)	0 - 5	5 - 11	11 - 16	16 - 20	20 - 25
11. WET UNIT WEIGHT (g/cm³)	1.237	1.252	1.249	1.230	1.234
12. SPECIFIC GRAVITY OF SOLIDS	2.561	2.586	2.641	2.559	2.544
13. WATER CONTENT (%) dry weight)	217.87	204.42	212.07	226.04	220.05
14. VOID RATIO	5.580	5.281	5.600	5.784	5.598
15. SATURATED VOID RATIO	5.580	5.287	5.600	5.784	5.598
16. POROSITY (%)	-	84.80	84.09	84.85	85.26
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)					
REMOULD (g/cm²)					
23. COHESION NATURAL (g/cm²)		3.3	9.1	6.6	0.88?
REMOULD (g/cm²)					
24. SENSITIVITY					
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SLUMP (%)					

WET UNIT WEIGHT, DENSITY, & VOID RATIO COMPUTED ASSUMING SEDIMENT IS 100% SATURATED

2-SETS

SHEAR STRENGTH OR CONESSION OBTAINED BY INSECTING VANE PARALLEL TO SEDIMENT PARTICLES (CLAY-ROCK STRUCTURE) PATTERN THAN NORMAL TO THEM: ITEM NO. 362

MC 309005029

**CORE ANALYSIS SUMMARY SHEET**  
**ENGINEERING PROPERTIES**

PRNC-NAYOCEANO-3167/18 B (1-63)

ANALYZED BY ARCHSTETTER  
DATE 16 JANUARY 1969

1. CRUISE NO. CHESAPEAKE BAY	4. SAMPLE NO.	BS-2 (Station #2)	7. TYPE CORER Boomerang
2. LATITUDE 38° 2.3'	5. DATE TAKEN (Day, month, year)	1968 DEC. 7. 9	8. CORE LENGTH (cm)
3. LONGITUDE 76° 31' 49"	6. WATER DEPTH (m)		9. CORER PENETRATION (cm) —
10. SUBSAMPLE DEPTH IN CORE (cm)	5. 10	10. 15	15. 20
11. WET UNIT WEIGHT ( $\text{g/cm}^3$ )	1.264	1.260	1.258
12. SPECIFIC GRAVITY OF SOLIDS	2.559	2.613	2.625
13. WATER CONTENT (% dry weight)	191.14	198.89	202.12
14. VOID RATIO	4.891	5.196	5.312
15. SATURATED VOID RATIO	4.891	5.196	5.312
16. POROSITY (%)	83.02	83.86	84.16
17. LIQUID LIMIT			
18. PLASTIC LIMIT			
19. PLASTICITY INDEX			
20. LIQUIDITY INDEX			
21. COMPRESSION INDEX FROM LL			
22. COMPRESSIVE STRENGTH NATURAL REMOULD	( $\text{kg/cm}^2$ )	( $\text{kg/cm}^2$ )	
23. COHESION NATURAL REMOULD	( $\text{kg/cm}^2$ )	( $\text{kg/cm}^2$ )	
24. SENSITIVITY			
25. ANGLE OF INTERNAL FRICTION ( $^\circ$ )			
26. ACTIVITY			
27. MODULUS OF ELASTICITY			
28. SLUMP (%)			
29. REMARKS	6. 2.4	1. 6.6	2. 0.2

WET UNDERRAFT, LOOSE & VOID RATIO COMPUTED ASSUMING SEDIMENT IS 100% SATURATED IN-SITU.

SHEAR STRENGTH OR COHESION OBTAINED BY INSERTING JANE PARALLEL TO SEDIMENT PARTICLES  
(CARDHOUSE STRUCTURE) KATHER THAN NORMAL TO THEM.

Item No. 362